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Voluntary and Involuntary Lending

A Test of Major Hypotheses

Peter Nunnenkamp

The reversal of net international capital flows since 1982 is attributable more to reduced inflows of new bank credits than to higher debt service obligations. Credible adjustment efforts would increase the creditors' willingness to lend new credits.

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The author of this paper assessed the empirical relevance of various conjectures about what determined whether creditors would issue loans to developing countries in the 1980s. He found that:

With the onset of the debt crisis, private creditors began to honor debtors who improved economic performance and policies — providing higher capital flows especially where investment ratios were higher. (The counterhypothesis that policy-induced improvements in the economic performance of problem borrowers resulted in reduced net transfers must be rejected.)

Private creditors were not prepared to compensate for unfavorable developments in the world market with additional lending. Small borrowers who did not benefit from involuntary lending had great difficulty attracting further capital inflows when they were hit by external shocks.

Standard sovereign risk arguments dominate when net transfers are to be explained. Creditors are not inclined to throw good money after bad, as some believed would happen. As default risks increased, so did their reluctance to increase net transfers. In deciding whether to continue lending, banks relied particularly on the effectiveness of trade sanctions.

Private creditors are reluctant to lend additional funds partly because most problem borrowers have not introduced consistent, far-reaching economic policy reform. Borrowers who want to re-establish their creditworthiness must intensify their adjustment efforts. Creditors are unlikely to honor policy efforts to which the debtor country's commitment is not credible, particularly if it seems the country will ultimately decide to default on its debt. Creditors are unlikely to be responsive if they lack information or suspect that borrowers will refuse to service external debt they are able to pay.

The author proposes creating an internationally binding legal system which, by reducing sovereign risks, would encourage private creditors to resume lending. One way to rule out sovereign risk would be to make transfer agreements self-enforcing — by supplementing the traditional credit contract with a third-party contract that is easily enforceable within the creditor's domestic legal system. Under this third-party contract, the debtor would be bound to pay a high premium in the case of willful default. This would discourage debtors from suspending debt-service payments they are able to pay.

If debtors are given more incentive to meet debt obligations through more efficient economic policies, creditors will be more likely to share the credit risks triggered by unfavorable developments in the world market, according to the author. As the distribution of credit risks between debtors and creditors improves, the capital outflow from developing countries will be checked.

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Voluntary and Involuntary Lending*

by

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Contents

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I. Introduction

The Western commercial banks were frequently blamed for overly aggressive lending to Third World borrowers in the 1970s. Overlending was considered a major factor in causing the subsequent widespread debt crises of developing countries. It appears to be somewhat paradoxical that the drastic change in the lending attitudes of banks since 1982 has added considerably to concerns about the efficiency of international credit relations. Arguably, the banks switched from one extreme to another, i.e., from overlending to underlending [Guttentag, Herring, 1985]. While even in 1980-82 the developing countries received about US$ 10 billion annually in net transfers out of bank loans, they suffered from substantial negative net transfers afterwards[1]. For the 1983-86 period, average annual outflows of about US$ 12 billion were recorded [World Bank, 1988]. The reluctance of commercial banks to continue lending may seriously affect the growth prospects of Third World economies and, hence, the future potential of these countries to service their external obligations. However, before judging on the efficiency of international credit relations, the determinants of the actual lending behaviour of banks have to be identified in the first place.

It is no longer disputed that risk illusions of creditors played a crucial role with regard to the generous lending until the early 1980s. Credit guarantees provided by both the borrowers' and the lenders' governments and central banks distorted the incentives to follow prudent lending strategies. Consequently, banks did not rigorously discriminate between good and bad credit risks [Nunnenkamp, 1986a]. However, considerable confusion prevails about the major factors underlying the behaviour of banks after risk illusions have been destroyed. In the rich body of theoretical literature it is heavily debated, for example, whether or not a favourable economic performance of borrowers

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[1] Net transfers represent the difference between gross inflows of credits on the one hand and amortization and interest payments on the other hand.

will induce increased capital inflows. Studies on the empirical relevance of the various conjectures raised are still lacking.

It is the major aim of the following investigation to narrow this gap by empirically analyzing the determinants of commercial lending to developing countries in the 1980s. This is done on the basis of the hypothesis that the behaviour of private creditors is no longer subject to the fairly uniform set of incentives which governed lending to the wide spectrum of Third World borrowers in the 1970s. Evidence suggests that a differentiated approach is required: Notwithstanding that all major Third World regions experienced reduced net transfers out of bank credits, it was mainly Latin America which suffered from considerable outflows of private capital; whereas net transfers remained positive in the case of East Asia [Nunnenkamp, 1988a, Tables 2 and A3]. After the risks in international lending have become evident, the influence of possible determinants of credit extension is likely to differ between various types of borrowers. Most importantly, a distinction between voluntary and involuntary lending seems to be required. This is because on-lending enforced by public agencies (including international organizations) and the leading banks within bank syndicates has gained in importance in the context of debt rescheduling packages. Lending to developing countries is thus supposed to take place in different regimes.

The current confusion about the determinants of commercial lending appears to be largely due to the fact that conflicting hypotheses apply to different lending regimes. Consequently, we proceed by clarifying the most prominent conjectures raised in the literature (Section II). Section III presents a simple indicator approach on the basis of which our 36 sample countries are classified into different lending regimes. Subsequently, the estimation procedure is specified (Section IV). The empirical results are discussed in Section V, and conclusions are drawn in Section VI.

II. Conflicting Hypotheses on Bank Behaviour under Different Lending Regimes

Major lending regimes: Estimating the determinants of lending by private creditors is complicated by the fact that different regimes under which credits are extended have to be considered [Eaton, Gersovitz, Stiglitz, 1986, pp. 503f.]. Observed lending is the minimum of credit ceilings imposed by creditors and the level of debt desired by borrowers. Supply factors are essential even in the absence of borrowers that are not able or willing to pay the debt service due. Credit rationing is likely to occur in markets with imperfect information which render it difficult for lenders to identify "good borrowers" [Stiglitz, Weiss, 1981]. Potential debtors may be denied loans by creditors even if the former indicate their willingness to pay more than the currently prevailing market rates of interest. In this way, lenders limit the riskiness of loan portfolios arising from adverse selection among perceptionally identical borrowers.

However, some debtor countries may still be free to borrow up to the level of desired debt, although Eaton and Gersovitz [1981a] found the credit constrained regime to be prevalent in 1974 already[1]. Probably, this applies to borrowers which succeeded to engage in "cooperative" credit relations with foreign lenders in the first place. A cooperative equilibrium in lending can be achieved if the borrower precommits himself to a certain investment behaviour, in terms of both the amount and riskiness of investments [for a detailed analysis, see Lächler, 1985]. Such a precommitment is hardly enforceable by the creditors within the institutional framework currently underlying the international transfer of resources [Stüven, 1988]. But the banks will be prepared to meet the borrower's demand for loans if past experience makes them confident about the credibility of the borrower. Under

[1] The latter result is rather surprising. As argued in Section III, the approach followed by Eaton and Gersovitz in classifying countries into different lending regimes yielded extremely implausible results for many borrowers.

conditions of non-constrained lending, the observed debt flows are demand determined.

The mix of regimes under which lending is taking place has become more diversified with the emergence of the widespread debt crises in the early 1980s. Further differentiation seems to be required with regard to supply factors particularly, i.e., for the group of credit constrained countries. The concept of credit rationing principally refers to voluntary lending. Recently, however, involuntary lending has gained in importance. Government intervention seems to have overruled the banks' risk considerations in the late 1970s and early 1980s already[1]. Subsequently, this factor has gathered momentum. Within emergency actions and rescheduling programs it was mainly the IMF which pressed banks to continue or even increase lending to major problem borrowers [see e.g. Kraft, 1984, on the Mexican case]. In the case of Latin America, spontaneous or voluntary lending accounted for only 8 per cent of total long-term bank credit commitments in the 1983-87 period [Watson et al., 1988, Table 5]; concerted credit extension, as the most prominent type of involuntary lending, amounted to US$ 41 billion[2].

It is in various respects that the determinants of bank behaviour may differ between the regimes of non-constrained versus constrained lending and voluntary versus involuntary lending. Conflicting hypotheses have been raised in the literature with re-

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[1] In a survey conducted by the Group of Thirty [1982], about 25 per cent of bankers responded that loan decisions were influenced considerably by political pressures of creditor governments.

[2] Concerted credit extension must not be confused with syndicated lending which figured prominently until the early 1980s. The former refers to equiproportional increases in loan exposure, enforced by public agencies such as the IMF and/or coordinated by bank advisory committees; whereas individual banks were free to decide on their participation in syndicated lending. Admittedly, the figures on voluntary and involuntary lending presented by Watson et al. provide only a rough indication; see also the more detailed discussion on pp. 16f.

gard to the following aspects particularly, which will be discussed in turn in the subsequent paragraphs:

- It is debatable whether good economic performance of debtors leads to reduced or increased capital inflows.
- It is open to question whether or not commercial banks are prepared to share the risk of external shocks with the borrowers, i.e., to increase lending temporarily when borrowers are hit by negative world market developments.
- The impact of sovereign risk and the relative bargaining power of debtors and lenders on capital flows remains to be clarified.

The impact of domestic policies: It was shown elsewhere that domestic policies and economic performance of debtors hardly affected the amount of private capital inflows and the terms under which bank credits were granted in the late 1970s and early 1980s [Nunnenkamp, 1986a]. This may have changed after risk illusions have been destroyed. It is no longer to be disputed that the borrowers' economic policies figured prominently in determining whether or not external debt became unmanageable[1]. Hence, since 1982, well performing countries may have access to additional loans more easily than borrowers which performed less favourably, provided that private creditors learnt their lessons[2]. Even so, the impact of policy and performance variables on capital flows is likely to remain indeterminate when assessed at the overall level of all borrowers.

In the case of non-constrained borrowers, the observed transfers are demand determined. The recent reduction of external indebtedness in countries such as South Korea and Malaysia exemplifies

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[1] For a discussion of the relevance of domestic policies with regard to debt problems, see e.g. Baneth [1986]; Khan, Knight [1983]; Nunnenkamp [1986b]; Zaidi [1985].

[2] Cohen and Sachs [1986, p. 548] concluded, for example: "The equilibrium strategy of the lenders makes the growth of debt contingent on the growth of the borrowing country".

the case in point. For this group, it depends on domestic policy priorities whether the relationship between economic performance and further debt inflows is positive or negative. The relationship between economic policies and new lending can be expected to be less ambiguous in the case of constrained borrowers, especially those which did not benefit from involuntary lending. Probably, these countries are prepared to accept fresh money as soon as credits become available. An empirical test of the hypothesis that better policies and improved economic performance encourage additional lending is required for this group of borrowers particularly. Such an analysis may help to clarify the current discussion on whether or not economic adjustment is in the interest of today's problem borrowers. However, it may still be too early to arrive at definite conclusions in this respect. The statistical basis for running empirical tests remains poor due to the fact that few problem borrowers have embarked on consistent policy reforms[1].

The view that additional bank lending to today's problem borrowers may be induced by policy adjustment and improved economic performance has been challenged recently. The counterhypothesis states that "good performance by a problem debtor leads to reduced, not increased, capital inflows" [Krugman, 1987b, p. 278]. The reasoning is based on the assumption that current lending to constrained borrowers is of involuntary nature. It may well be in

[1] Turkey which undertook a far-reaching policy reform in 1980 represents one of the few exceptions. The adjustment measures had favourable effects on economic performance in the early 1980s, most notably in terms of export expansion and GDP growth [Balassa, 1986, p. 117]. The economic improvements encouraged commercial banks to resume voluntary lending. While net borrowing from banks was negative in 1981-82, substantial net inflows of bank credits were reported since 1983. Currently, Chile is often considered to regain access to private international capital markets in the near future. This expectation is mainly based on the correction of the overvaluation of the Peso since 1983 and the recent improvement in export performance [Barandiaran, 1988].

the bank syndicate's interest to provide loans involuntarily[1]. In case of a debt overhang, i.e., when the expected present value of debt-service payments is substantially below the contractual value of the country's external debt, additional lending is unprofitable viewed in isolation. However, throwing good money after the bad makes sense if it helps to protect existing claims [Krugman, 1987a]. Additional credits may narrow the gap between the current market valuation of a country's debt and its contractual value, as reflected in the discounts prevailing in secondary markets. Consequently, expected losses may be reduced by involuntary lending. According to this reasoning, the incentive of bank syndicates to orchestrate fresh money packages is weakened if the market valuation of external debt improves due to policy adjustment and better economic performance of the debtor country. The more the borrower succeeds in raising the valuation of his debt in the secondary market, the less involuntary lending is required to reduce the expected losses of creditors. Hence, involuntary lending is supposed to be negatively related to the borrowers' adjustment efforts.

This hypothesis has to be qualified, however. Typically, problem borrowers ask for fresh money from creditors whose claims from former lending are at stake. This is because lending that is unprofitable viewed in isolation would not take place if creditors were not engaged in an overindebted country already. In other words: The incentives for involuntary lending are restricted to the country's current creditors [see also Eaton, Gersovitz, Stiglitz, 1986, p. 496]. Other potential creditors face a completely different incentive structure [Dooley, 1986]. The market valuation of credits extended voluntarily by new lenders would become identical to the value of all existing claims. The

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[1] It is important to note that involuntary lending involves a conflict between the creditors' individual and collective interest. Individual banks have the incentive to opt out of additional lending and let other creditors carry the burden. The free-rider problem, which may compromise the ability to achieve new lending, is typically tackled by concerted actions organized by the leading banks within the syndicate.

higher the current discount on existing debt, the higher the immediate capital losses of new creditors would be. The willingness of new creditors to engage in voluntary lending to problem borrowers can thus be expected to be positively related to the debtors' efforts to raise the market valuation of existing debt by economic adjustment measures. Whether or not the hypothesis of a negative relationship holds is likely to depend on the relative importance of involuntary lending by old creditors and voluntary lending by potentially new creditors.

Sharing of external shock risks: As in the case of internal policy adjustment, the impact of external shocks on additional lending is likely to differ between lending regimes. External shock risks are mainly due to deteriorating terms of trade, sluggish world demand for the borrowers' exports, and rising international interest rates. Unfavourable world market developments can generally be assumed to add to the demand for foreign capital[1]. Commercial banks can be expected to fully satisfy the shock-induced demand of non-constrained borrowers for additional loans. As far as credit constrained debtors are concerned, two subgroups of borrowers can be distinguished:

- Large debtors, for which involuntary lending has already been orchestrated, may find it relatively easy to get additional credits when external shocks occur[2]. The argument that highly exposed banks are interested to protect outstanding claims via

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[1] The effects of rising international interest rates on the demand for foreign loans are less straightforward, because the incentives to finance projects out of domestic funds are strengthened. However, this demand-reducing effect is likely to be overcompensated. Typically, the debt service for existing debt is largely financed through further borrowing. Especially when flexible interest-rate debt figures prominently, the demand for loans is likely to increase with rising interest rates. Moreover, the chances to mobilize additional domestic funds in the short run are remote for many developing countries because of low elasticities of supply of domestic savings.

[2] The 1987 rescheduling of Mexican debt owed to commercial banks provides a case in point. An agreement on contingency lending was part of the deal. In the case of declining oil prices, the banks were prepared to provide additional credits.

new lending can be advanced in the case of external shocks as well. However, since new lenders are unlikely to participate, the shock-induced demand for additional credits may not be met fully by increased supplies.

- For credit constrained countries which did not benefit from involuntary lending before, the compensation of external shocks by additional loans is supposed to be most difficult.

Lending under sovereign risk: The fact that involuntary lending has been organized by bank syndicates for some, but not for all problem borrowers strongly points to the relevance of the relative bargaining power of debtors and lenders in determining the flow of bank credits in the 1980s. The notion of lending as a bargaining process [e.g. Bulow, Rogoff, 1986; 1988] refers to the discussion of sovereign risk in international credit relations [for an overview, see Eaton, Gersovitz, Stiglitz, 1986]. In the case of sovereign lending, default is not only a matter of the borrower's ability to service external debt, but also of his willingness to pay. Contrary to domestic lending contracts, debt servicing is hardly enforceable by creditors in the international context. After the contract is concluded and the capital is transferred, a substantial range of discretion accrues to the debtor. The honouring of contractual obligations becomes a matter of cost-benefit calculus [Nunnenkamp, Picht, 1988].

Rational lenders will consider the borrower's incentives to default, when deciding on whether further credits are granted. Hence, additional lending is supposed to be negatively related to the benefits to be reaped by debtors from repudiating external debt, and positively related to the potential costs of such a behaviour [Eaton, Gersovitz, Stiglitz, 1986, p. 490]. The borrower's benefits from default mainly depend on the level of accumulated debt, respectively the debt-service burden. The higher the discounted net value of contractual obligations is that are refused to be paid, the higher the benefit is for borrowers which otherwise would have to forgo domestic resources when the credits

are due [Eaton, Gersovitz, 1981b, p. 302]. As far as the costs of default are concerned, the borrowers have to take into account the sanctions which may be imposed on them by the creditors [Sachs, 1984, pp. 17f.]:

- Defaulting countries may be cut off from future borrowing in international capital markets. Especially the loss of trade credits may represent an important cost of default.
- The debtor's overseas assets may be subject to direct seizure in the creditor countries.
- Creditor countries may agree on trade embargos as a retaliatory measure against borrowers that default willfully[1].

Apparently, the borrowing countries have been aware of those costs. They avoided to repudiate their debt-service obligations completely and persistently. However, they used the threat of outright default to press the banks to participate in debt renegotiations and reschedulings, which typically involved new (involuntary) lending [Sachs, 1981, pp. 199f.; Stüven, 1988]. Lacking enforceability of claims against sovereign debtors, creditors agreed to additional lending as part of reschedulings in order to reduce the probability of unilateral actions taken by sovereign borrowers and, hence, expected losses. This leads to the counterhypothesis that, once debt-servicing problems have emerged, the expectation of default will induce rather than prevent further lending [Krugman, 1987a; Cohen, Sachs, 1986, pp. 539f.].

According to this reasoning, the bargaining power of debtors in transfer negotiations increases if accumulated debt is high enough to pose a serious threat for the creditors' financial position. Under conditions of a debt overhang, it is considered to be more favourable for the creditors to grant debt relief, i.e., to leave the debtor with higher net transfers, than

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[1] For a model in which the penalty associated with default depends positively on the importance to a debtor of his opportunity to trade, see Gersovitz [1983].

attempting to get the maximum amount of debt-service payments from the debtor immediately[1]. It is argued that the incentives of a debtor country to make adjustment efforts (especially to invest a larger proportion of domestic absorption) are weakened if the creditors do not compromise on current debt servicing. The gains from extra output generated by economic adjustment would accrue to the creditors exclusively, whereas the debtor would not benefit at all. Since forgone investment negatively affects the debtor's future ability to pay, the lenders will suffer in the longer run as well. They are thus expected to allow for higher net transfers, once they are uncertain about whether or not defaults will occur when lending is refused.

Moreover, the counterthreat of creditors to impose sanctions is not believed to be credible. First of all, the effectiveness of possible sanctions is disputed:

- The argument that countries avoid to default because otherwise they will face prolonged financial autarky is based on an infinite-horizon reputational model; it is assumed that short-term consumption smoothing represents the main reason for sovereign borrowing [Eaton, Gersovitz, 1981a]. However, "the loans are patently not short term. It seems totally implausible that the rulers of these countries have discount rates so low that they will repay these debts over the next twenty or thirty years, primarily in order to be eligible to borrow ... again sometime well into the next decade" [Bulow, Rogoff, 1986, p. 26].
- As far as trade sanctions are concerned, experience suggests that the effectiveness of embargos is uncertain at best [Donges, 1982]. Moreover, it depends on the relative lobbying power of different interest groups in the creditor countries whether sanctions are introduced altogether.

Secondly, the standard argument that penalties are Pareto improving and well suited to encourage further lending is chal-

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[1] For a critical evaluation of this reasoning, see Corden [1988]; Nunnenkamp [1988b].

lenged because it is purely based on ex-ante considerations. "Ex post, once the country has borrowed and gotten into trouble, the ability to penalize can be harmful" [Kroot, Scharfstein, Stein, 1988, pp. 17ff.]. The lenders are not interested to realize the threat of sanctions because higher penalties are likely to render default more costly to them as well. In order to reduce the losses from complete and permanent debt repudiation, lenders are inclined to agree to reschedulings and debt renegotiation. In this way, they may recover at least part of their claims against the borrower. Rational debtors and lenders will anticipate the disincentive problems in enforcing sanctions. The probability of default and, hence, lending decisions are then unlikely to be influenced by the threat of sanctions [Sachs, 1984, pp. 23ff.].

III. Classification of Sample Countries

The discussion of major hypotheses on the behaviour of private creditors clearly points out that lending to Third World economies is unlikely to be governed by a uniform set of incentives. Hence, different lending regimes have to be defined and the sample countries have to be categorized before running empirical estimates. There is little we can refer to in the literature. The problem of different lending regimes was typically not considered in the few former cross-country studies that have tried to assess the determinants of private lending empirically [e.g. Edwards 1984; 1986; Nunnenkamp, 1986a]. A two-regime model presented by Eaton and Gersovitz [1980; 1981] revealed that most countries were credit constrained in 1974. However, the fairly sophisticated approach applied to calculate the likelihood that a sample country was credit constrained yielded extremely implausible results in many cases[1]. In the following, a rather pedestrian approach is applied in order to classify our sample countries into different lending regimes.

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[1] For example, the probability of being credit constrained was very low for Honduras, Jamaica, Nicaragua, Trinidad and Tobago, Zaire and Zambia; whereas it was extremely high for South Korea and Thailand.

We consider three indicators out of which an overall index ranging from "0" (lowest probability of supply constraints) to "9" (highest probability) is constructed, in order to decide whether or not a debtor country is credit constrained:

- level and change in international reserves held by the debtor country;
- undisbursed credit commitments as a share of disbursements;
- occurrence and quantitative role of reschedulings.

As concerns international reserves, it has been argued that "countries which are not credit constrained may have reserve holding behavior different from that of countries which are credit constrained" [Eaton, Gersovitz, 1980, p. 5]. Reserves are supposed to have higher opportunity costs if supply constraints are binding. Credit constrained countries that want to sustain imports in the short run have to finance imports out of reserves. Consequently, international reserves are assumed to be relatively low and/or to decline in the case of debtors facing credit supply constraints[1]. In Table 1, one index point is attached to countries where the average import coverage of reserves was below one month in the 1980-86 period. This was significantly below the average import coverage ratio of all developing countries (3.4 months). Extremely low ratios are assumed to indicate that countries were supply constrained persistently in the 1980s. Additionally, changes in per-capita levels of international reserves are calculated, contrasting the two years of the 1982-86 period for which the indicator was lowest with the average of 1980-81[2]. The

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[1] Doubts may arise about the unbiasedness of results if changes in reserves were considered exclusively. Most importantly, reserves are unlikely to decline drastically when reserves were already low. Hence, the level of reserves is taken into account additionally in deciding on whether a country is credit constrained.

[2] Reserves per capita are preferred over import coverage of reserves in calculating changes in reserve behaviour. This is because the relative stability of the latter indicator is mainly due to significant cuts in imports in many countries, which were hardly sustainable in the longer run.

Table 1 - Classification of the Sample Countries into Credit Constrained and Non-Constrained Debtors[a]

	Indicators for Credit Constraints							Overall index
	RES/MGS < 1.0 (1980-86)	Reduction in RES/POP 30-50 p.c.	Reduction in RES/POP > 50 p.c.	COM/DIS < 1.05 (1980-86)	Reduction in COM/DIS 50-80 p.c.	Reduction in COM/DIS > 80 p.c.	RESCH (1980-87)	
Algeria		1						1
Argentina			2	1		2	3	8
Bolivia					1		2	3
Brazil		1			1		2	4
Chile		1		1		2	3	7
Colombia			2				1	3
Congo	1		2		1		2	6
Costa Rica					1		2	3
Dominican Rep.		1		1		2	2	6
Ecuador		1				2	3	6
Gabon							2	2
Guyana	1	1		1		2	1	6
Honduras							2	2
Indonesia		1						1
Israel				1		2		3
Ivory Coast	1		2			?	2	7
Jamaica	1					2	2	5
Kenya					1			1
Korea, Rep.					1			1
Malaysia						2		2
Mexico		1		1	1		3	6
Morocco			2				2	4
Nigeria			2			2	3	7
Panama	1					2	2	5
Paraguay		1				2		3
Peru						2	2	4
Philippines			2		1		2	5
Thailand					1			1
Trinidad & Tob.			2		1			3
Tunisia			2					2
Turkey							2	2
Uruguay			2		1		3	6
Venezuela				1			3	4
Yugoslavia		1		1			2	4
Zaire		1		1			2	4
Zambia			2		1		1	4

[a] RES/MGS : International reserves in months of imports of goods and services; period averages.
RES/POP : International reserves per capita (US$); the calculation of changes is for the average of the two years of the 1982-86 period for which RES/POP was lowest vis-à-vis the average of 1980-81.
COM/DIS : Ratio of commitments to disbursements of public and publicly guaranteed credits raised in private financial markets (i.e. private creditors without suppliers' credits); this ratio is considered low if undisbursed commitments as a share of disbursements are less than 5 per cent on an average for 1980-86. The calculation of chances is for the average of the two years of the 1982-86 period for which undisbursed commitments as a share of disbursements were lowest vis-à-vis the average of 1980-81.
RESCH: Multilateral reschedulings in the 1980-87 period; double counting occurs due to multiple reschedulings of the same debt; one index point, if the rescheduled amount is below 25 per cent of outstanding debt in 1980; two (three) index points, if the rescheduled amount is 25-100 per cent (more than 100 per cent) of outstanding debt.
Overall index:
Sum of index points for all indicators considered; index figures may range from "0" (lowest probability that a country is credit constrained) to "9" (highest probability that a country is credit constrained).

Source: World Bank, World Debt Tables. - Own calculations.

assumption is that countries for which reserves decreased drastically became credit constrained in the early 1980s. One (two) index point(s) are attached to cases where the reduction in per-capita reserves exceeded 30 per cent (50 per cent).

Undisbursed commitments, as a share of disbursements of public and publicly guaranteed credits raised in private financial markets, are considered as an additional indicator to classify our sample into credit constrained and non-constrained countries. This is because debtors whose demand for new credits exceeds the ceiling imposed by creditors can be supposed to fully exhaust the available credit lines; while non-constrained debtors have the choice to raise fresh money which may be cheaper than drawing on already existing credit lines[1]. Similar to the reasoning with respect to reserve holdings, one index point is attached to countries for which undisbursed commitments were marginal throughout the 1980-86 period (below 5 per cent of disbursements; all developing countries: 13 per cent). Additionally, one (two) index point(s) are attached to cases where the share of undisbursed commitments in disbursements declined by more than 50 per cent (80 per cent), contrasting the two years of the 1982-86 period for which this indicator was lowest with the average of 1980-81 (all developing countries: -57 per cent).

Finally, reschedulings are supposed to indicate that a country is credit constrained. The lack of access to foreign credits provided on a voluntary basis may cause the debtor to ask for the restructuring of old debt, since the debt service due can no longer be met out of fresh money. In Table 1, one index point is attached to countries which rescheduled a minor part of their

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[1] Changes in the ratio of undisbursed credit commitments may, of course, be due to other factors as well. Administrative problems in the borrowing country affect credit disbursement by multilateral lenders such as the World Bank particularly. Arguably, such problems can be supposed to be less relevant in the case of unconditional private bank lending.

foreign debt in the 1980-87 period[1]. Two (three) index points are attached to the country if the rescheduled amount exceeded 25 per cent (100 per cent) of total debt outstanding in 1980.

The overall index given in the last column of Table 1 simply adds up the index points for the aforementioned indicators. The probability of being credit constrained is supposed to be high (low) for debtors with high (low) index figures . With only few exceptions, the indicator approach yields fairly plausible results. This refers particularly to debtors with high index figures which can safely be assumed to be credit constrained. Some doubts may be raised whether the loan demand of all countries with low index figures was fully met by creditors on a voluntary basis; this applies to Gabon, Honduras, and Kenya especially. The classification of the sample countries into the two lending regimes requires to define a critical index figure. This is of course an arbitrary exercise. We set the dividing line at an index figure of "2", i.e. considering all countries with index figures of more than "2" (less than "3") as supply constrained (non-constrained). In order to be on the safe side, Gabon, Honduras, and Kenya are omitted in the regime-specific estimations[2].

As argued before, different lending regimes may also prevail within the group of credit constrained debtors. Most importantly, some but not all of the supply constrained countries may have access to fresh money due to the creditors' interest to protect existing claims. Involuntary lending is supposed to be of im-

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[1] One index point is attached to Colombia as well, although the agreement with its creditors in December 1985 was restricted to concerted new lending without debt restructuring.

[2] The seven remaining countries classified as non-constrained are: Algeria, Indonesia, Korea, Malaysia, Thailand, Tunisia, and Turkey. The plausibility of this classification is further strengthened when looking at the credit rating of these countries, as given by the Institutional Investor Magazine. The first six countries were the only ones among all sample countries which maintained a favourable rating, i.e. above 40 index points, throughout the 1983-86 period. In the case of Turkey, the rating improved most remarkably from 12 index points in 1980 to 38 index points in 1986.

portance if concerted lending activities of Western commercial banks took place in the 1983-87 period. Concerted lending refers to equiproportional increases in exposure, coordinated by bank advisory committees [Watson et al., 1988, p. 24ff.]. Arguably, involuntary lending may also be of relevance for countries where concerted arrangements have not been observed. This may apply to rather small countries where only a small number of banks are engaged so that formally concerted arrangements are not required to protect old debts by new lending. Typically, however, a conflict between the creditors' individual and collective interest arises when involuntary lending is asked for. Concerted actions by bank consortia can be considered to be the most effective means to overcome the free-rider problem which otherwise may compromise the ability to achieve desirable new lending [Krugman, 1987a]. It thus seems adequate to assume the regime of involuntary lending to consist of countries for which concerted lending was arranged by creditor banks. According to the International Monetary Fund, this was the case for the following 14 debtor countries: Argentina, Brazil, Chile, Colombia, Congó, Ecuador, Ivory Coast, Mexico, Nigeria, Panama, Peru, the Philippines, Uruguay, and Yugoslavia[1].

The aforementioned classification of debtors allows us to run separate regressions on the determinants of bank lending for groups of countries belonging to different lending regimes. This is most important since it is to be expected that the factors determining the behaviour of private creditors differ on whether or not a borrower is supply constrained and on whether or not banks are prepared to provide fresh money involuntarily.

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[1] It may be argued that different lending regimes prevail even within individual countries belonging to this group, insofar as they still receive some loans on a voluntary basis. However, credit extension to these countries can safely be assumed to be dominated by involuntary lending. In the case of Latin America, concerted bank lending accounted for 92 per cent of total long-term bank credit commitments [Watson et al., 1988, Table 51].

IV. Equation Specification

In the following, cross-country regressions are run for a sample of 36 Third World economies. The most important criterion for the selection of this sample was that borrowing countries maintained considerable credit relations with private lenders, especially commercial banks. The sample covers all major problem borrowers as well as debtors which did not experience serious payment difficulties in the 1980s. Moreover, the countries under consideration differ in terms of economic performance and the extent to which they were hit by unfavourable external shocks. The analysis covers the 1983-86 period. This is because lending attitudes of banks have changed drastically since 1982. Whereas bank loans were easily available up to the early 1980s, private creditors became extremely reluctant to provide fresh money after the debt crisis erupted.

Annual data for the years 1983-86 are pooled in the OLS-regressions performed. As far as the dependent variables are concerned, we consider net transfers out of long-term public and publicly guaranteed credits from private creditors plus total non-guaranteed private loans (NTR) and disbursements of the same types of foreign debt (DIS)[1]. Both NTR and DIS are expressed as a proportion of gross national product, in order to account for the different size of the sample economies. Arguably, foreign banks decide on disbursements in the first place, whereas net transfers may also be influenced by the debtor countries' decisions on whether or not debt-service payments are effected. With few exceptions, however, the debtors did not refuse to service external debt permanently and unilaterally. Debt relief was rather mutually agreed upon within reschedulings; i.e., the lending behaviour of banks not only determined credit disbursements but was also

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[1] For detailed definitions of variables, see the Appendix. Interest payments and loan repayment constitute the difference between DIS and NTR.

relevant for net transfers[1].

Different sets of explaining variables are considered in order to test the relevance of economic performance and economic policies, unfavourable world market developments, and factors influencing the relative bargaining power of debtors and lenders in determining the transfer of private credits. If not indicated otherwise, explaining variables are calculated as two-period averages for the years t and t-1. In this way, a lagged impact on NTR and DIS may be captured[2].

The impact of performance and economic policy variables on net transfers and disbursements is assessed by estimating the following equations:

$$(1)\quad NTR = a_0 + a_1\ GRO + a_2\ WMSHD + a_3\ REXR + a_4\ GOVR$$

$$(2)\quad NTR = b_0 + b_1\ INVR + b_2\ WMSHD + b_3\ REXR + b_4\ DEFR$$

$$(3)\quad DIS = c_0 + c_1\ GRO + c_2\ WMSHD + c_3\ REXR + c_4\ GOVR$$

$$(4)\quad DIS = d_0 + d_1\ INVR + d_2\ WMSHD + d_3\ REXR + d_4\ DEFR$$

where[3]:

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[1] Actually, NTR and DIS are closely related for all lending regimes considered. The Pearson correlation coefficient is highest in the case of involuntary lending (0.76). Even the relatively weak correlation between NTR and DIS for constrained countries not benefiting from involuntary lending (0.31) is significantly positive at the 1 per cent level of confidence.

[2] Additional regressions were run by using the observations for either period t or t-1. The coefficients of the individual variables were fairly stable irrespective of the procedure chosen. The best statistical fit was achieved by applying two-period averages for the explaining variables. Therefore, the additional results are not reported.

[3] For detailed definitions and sources of data, see the Appendix; for the economic rationale of selecting the explaining variables, see Nunnenkamp [1986a; 1986b, Chapter 6].

GRO = real growth in GDP per capita;
INVR = gross fixed capital formation, as per cent of GDP;
WMSHD = change in world export market share;
REXR = change in real effective exchange rate;
GOVR = government expenditure, as per cent of GDP;
DEFR = government budget deficit, as per cent of GDP.

Positive signs are to be expected for the coefficients of GRO, INVR, WMSHD, and DEFR[1], if better policies and a favourable economic performance of sample countries go along with higher capital inflows; whereas the coefficients of REXR[2] and GOVR[3] should be negative. The opposite pattern should hold if the counterhypothesis is more relevant in explaining the lending behaviour of private creditors. The Krugman line of reasoning is expected to be relevant for the regime of involuntary lending in the first place. For the group of non-constrained borrowers, the sign of the coefficients is left indeterminate by ex-ante considerations. Due to the high correlation between GRO and INVR, as well as GOVR and DEFR, the respective variables enter the regressions alternatively. Multicollinearity problems are kept to the minimum in this way.

Different types of external shocks may add to the loan demand of Third World borrowers. In the following, we assess the willingness of private creditors to provide additional credits in the case of deteriorating terms of trade and rising interest rates[4].

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[1] Lower government budget deficits result in higher values of DEFR.

[2] Negative values of REXR indicate a depreciation of the borrowers' currencies.

[3] Negative coefficients of GOVR are to be expected especially if the lenders conceived high government shares in domestic absorption as an indication of a relatively unproductive use of scarce resources in the borrowing country.

[4] Lower growth of world trade at constant prices may constitute another reason for higher financing needs. However, real world imports increased by more than 5 per cent per annum in the 1982-86 period. This was only slightly less than the respective growth rate for the second half of the 1970s. Moreover, world

contin. on page 21

This is done by supplementing equations (1) and (2)[1]:

$$(5)\quad NTR = a_0 + a_1\,GRO + a_2\,WMSHD + a_3\,REXR + a_4\,GOVR + a_5\,TOT + a_6\,IRAT$$

$$(6)\quad NTR = b_0 + b_1\,INVR + b_2\,WMSHD + b_3\,REXR + b_4\,DEFR + b_5\,TOT + b_6\,IRAT$$

where:

TOT = annual change in the terms of trade of the sample countries;

IRAT = average interest rates for new commitments by private creditors.

The coefficients of TOT (IRAT) should be negatively (positively) signed if banks are prepared to bear part of the external shock risks. Arguably, risk sharing with private creditors is most difficult to achieve for the group of credit constrained borrowers not benefiting from involuntary lending.

The basic test format for evaluating the impact of sovereign risk and relative bargaining power of debtors on capital inflows is given by equations (7) - (9):

$$(7)\quad NTR = a_0 + a_1\,EDTG + a_2\,TRADE + a_3\,SHDEX + a_4\,STDG + a_5\,SHXDC$$

$$(8)\quad NTR = b_0 + b_1\,EDTG + b_2\,TRADE + b_3\,SHDEX + b_4\,STDG + b_5\,BEXP$$

$$(9)\quad NTR = c_0 + c_1\,DSERG + c_2\,TRADE + c_3\,SHDEX + c_4\,STDG + c_5\,SHXDC$$

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trade picked up remarkably as compared to the years 1980-82. Consequently, this factor is neglected in the following. Frequently, high current account deficits are considered as an overall indication of the debtors' exposure to external shocks. This reasoning is not convincing, however, since domestic policies influence the country's current account position as well.

[1] Equations (5) and (6) were estimated with disbursements (DIS) as dependent variable as well. The results are not reported since they do not differ significantly from those achieved for the NTR-equations.

where[1]:

EDTG : total external debt outstanding, as per cent of GNP;
DSERG : debt service on long-term debt, as per cent of GNP;
TRADE : imports plus exports of sample countries, as per cent of GDP;
SHDEX : short-term debt, as per cent of the borrowers' exports;
STDG : fluctuation in real GDP per capita of sample countries;
SHXDC : importance of sample countries as export markets for the creditor nations;
BEXP : exposure of creditor banks in the sample countries.

Variables EDTG and DSERG represent alternative indicators for the benefits to be reaped by debtors from defaulting on external debt. They should be negatively signed if standard sovereign risk arguments hold, i.e., private creditors become increasingly reluctant to continue lending, the higher sovereign risks are perceived to be. Positive signs are to be expected if Krugman and Cohen/Sachs are correct in arguing that increasing default risks induce the banks to protect their existing claims by additional lending (see Chapter II, pp. 10f. above). The latter reasoning mainly refers to the regime of involuntary lending.

Potential costs to be borne by defaulting debtors are reflected in variables TRADE, SHDEX, and STDG. The borrower's incentives to default are supposed to be negatively related to the costs of such a behaviour. Consequently, private creditors would be more willing to extend further loans,

- the more the borrower depends on external trade relations (TRADE),
- the greater the role of short-term trade financing (SHDEX), and
- the stronger the motivation of the borrower to maintain cooperative credit relations with the lenders, in order to be able

[1] As before, explaining variables are calculated as two-period averages for t and t-1. However, EDTG represents debt outstanding at the end of t-1, as per cent of GNP. For detailed definitions, see the Appendix.

to smooth fluctuations in domestic absorption by foreign borrowing (STDG).

However, the coefficients of TRADE, SHDEX and STDG would remain insignificant if the counterhypothesis (advanced by Bulow/Rogoff, Froot et al., and Sachs) is correct in stating that the threat of creditors to impose sanctions in the case of default is not credible.

Variables SHXDC and BEXP provide additional indicators of the borrower's bargaining position in pressing for further loans. The bargaining power of debtor countries is perceived to be relatively high if they represent an important export market for the creditor countries (SHXDC). Moreover, the likelihood of further (involuntary) lending, which is unprofitable viewed in isolation, may be particularly high if the loan exposure of banks is considerable; the higher BEXP, the greater the threat that the financial stability of banks will be seriously affected by defaults. Variables SHXDC and BEXP enter the regressions alternatively. This procedure is followed because of the strong correlation between both variables[1].

In additional calculations, equations (7) - (9) are modified in two respects. Firstly, disbursements (DIS) are substituted for net transfers (NTR) as the dependent variable. Secondly, equations (7) and (9) are supplemented by a variable reflecting unexpected changes in economic growth of the sample countries. Two variants are tried:

GROD1 : difference between real per-capita growth in t and the average growth rate of the three preceding years;

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[1] Multicollinearity problems are largely ruled out in this way. This refers particularly to the regressions run for all 36 sample countries and the 14 credit constrained countries benefiting from involuntary lending. However, multicollinearity problems may distort the results for the group of non-constrained borrowers. In this case, extremely high correlations exist between EDTG and TRADE, STDG and SHXDC, as well as STDG and BEXP.

GROD2 : difference between real per-capita growth in t and the average growth rate in the 1970-80 period.

The latter modification refers to an argument advanced by Lächler [1985, pp. 29ff]. Countries are hypothesized to be more inclined to default on foreign debt when national income is lower than previously expected by both lenders and borrowers. The borrower would have to transfer a higher share of national income to the creditor if the assumptions on income growth, on which the agreement on the debt-service schedule was based, prove too optimistic. Hence, the benefits of default rise relative to the potential costs. As in the case of variables EDTG and DSERG, the effects of GROD1 and GROD2 on net transfers depend on the creditors' response to increasing sovereign risks. If the incentive of banks to protect existing claims dominates, a negative sign of the respective coefficient is to be expected.

V. Empirical Results

The empirical evidence on the determinants of commercial lending to developing countries supports our basic hypothesis that a differentiated approach is required. The existence of different lending regimes is most evident when credit disbursements represent the dependent variable. Turning first to the impact of economic policies and economic performance (Table 2), none of the explaining variables considered is found to be statistically significant for the group of 7 non-constrained debtors. This confirms our expectations of an indeterminate effect of domestic policies when capital inflows are demand determined. The countries belonging to the regime of non-constrained lending differ with regard to their borrowing strategies. For example, South Korea and Malaysia prepaid external debt recently. Political concerns about the sustainability of debt led to restrictive attitudes towards raising further loans, irrespective of whether or not loans could have been used productively.

Table 2 - The Impact of Economic Policies and Economic Performance on Net Transfers and Disbursements of Credits from Private Sources[a], 1983-1986

Lending regime[b]	Dependent variable	Constant term	Explaining variables GRO	INVR	WMSHD	REXR	GOVR	DEFR	$\bar{R}^2$ F	Degrees of freedom
All 36 countries	NTR	-2.20**	0.003		0.070**	0.000	0.014		0.05	78
		(-3.10)	(0.03)		(2.73)	(0.01)	(0.61)		2.07	
	NTR	-6.39**		0.204**	0.059**	-0.024		-0.040	0.22	78
		(-5.68)		(4.20)	(2.55)	(-0.96)		(-0.87)	6.94	
	DIS	1.23	-0.043		0.156**	-0.008	0.095**		0.36	78
		(1.65)	(-0.46)		(5.79)	(-0.29)	(3.84)		12.53	
	DIS	-3.31**		0.311**	0.138**	-0.044*		-0.078	0.50	78
		(-2.86)		(6.22)	(5.83)	(-1.69)		(-1.66)	21.31	
14 credit constrained countries benefiting from involuntary lending	NTR	-1.11	-0.186		0.162**	-0.005	-0.071		0.21	28
		(-0.82)	(-1.34)		(3.23)	(-0.12)	(-1.09)		3.15	
	NTR	-5.08**		0.164*	0.109**	0.000		-0.025	0.22	28
		(-2.97)		(1.84)	(2.11)	(0.00)		(-0.16)	3.22	
	DIS	-2.57**	-0.220*		0.225**	-0.037	0.303**		0.73	28
		(-2.17)	(-1.80)		(5.12)	(-1.00)	(5.33)		22.54	
	DIS	-2.21		0.268**	0.225**	-0.084*		-0.227	0.59	28
		(-1.19)		(2.76)	(4.03)	(-1.90)		(-1.28)	12.45	
12 credit constrained countries not benefiting from involuntary lending	NTR	-4.36**	-0.036		-0.027	-0.014	0.037		-0.12	17
		(-2.72)	(-0.15)		(-0.65)	(-0.29)	(1.06)		0.45	
	NTR	-12.66**		0.437**	-0.021	-0.047		-0.099	0.16	17
		(-3.42)		(2.55)	(-0.62)	(-1.13)		(-1.47)	1.97	
	DIS	-0.71	-0.096		0.014	0.017	0.066**		0.35	17
		(-0.26)	(-0.80)		(0.66)	(0.69)	(3.79)		3.83	
	DIS	-2.74		0.217*	0.014	0.002		-0.068	0.04	17
		(-1.07)		(1.82)	(0.59)	(0.06)		(-1.47)	1.20	
7 non-constrained countries	NTR	-4.94*	0.406		0.074	0.068	0.132		0.13	13
		(-1.82)	(1.43)		(1.14)	(0.79)	(1.56)		1.65	
	NTR	-2.38		0.058	0.082	0.080		-0.038	-0.06	12
		(-0.50)		(0.34)	(0.97)	(0.72)		(-0.19)	0.77	
	DIS	0.32	0.226		0.031	0.111	0.184		0.04	13
		(0.09)	(0.60)		(0.36)	(0.97)	(1.65)		1.19	
	DIS	-1.51		0.207	-0.017	0.019		-0.211	0.07	12
		(-0.27)		(1.02)	(-0.18)	(0.14)		(-0.89)	1.32	

[a]For the definition of variables and data sources, see the Appendix. All explaining variables calculated as averages of periods t and t-1. t-values in parentheses; ** indicates significance at the 5 per cent level (two-tailed t-test); * 10 per cent level. - [b]For the definition of lending regimes and the classification of the 36 sample countries, see Chapter III in the text.

Source: Own calculations.

For the regime of involuntary lending, there is some evidence supporting the Krugman line of reasoning that bad performance by a problem borrower leads to higher credit disbursements. Two coefficients support the view that bad policies and unfavourable performance encourage further lending in order to protect existing claims: the positive coefficient of the share of government expenditure in GDP (GOVR) and the negative sign of the growth variable (GRO)[1]. However, the coefficients of INVR, WMSHD and REXR point into the opposite direction. More importantly, from Table 2 there is no evidence suggesting that, under conditions of involuntary lending, net transfers are the higher, the more urgent the need of creditors to protect existing claims is perceived to be.

As far as net transfers are concerned, it is evident that the lending behaviour of private creditors has changed recently. Whereas bank lending was largely unaffected by the debtors' domestic policies in the late 1970s and early 1980s [Nunnenkamp, 1986a], the estimation of equations (1) and (2) reveals some significant relationships for the 1983-86 period. The evidence is strongest for the investment ratio (INVR) and changes in world export market shares (WMSHD)[2]. Both variables indicate that adjustment efforts by the debtors are honoured by the creditors.

This finding not only applies to the average of all sample countries. The same relationship is found for the group of 14 borrowers for which concerted bank lending took place. The positive impact of a favourable export performance on net transfers is

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[1] The former relationship is also found to be significant for the group of 12 credit constrained countries not benefiting from involuntary lending. But the coefficient is very small compared to the regime of involuntary lending.

[2] Notwithstanding the strong impact of INVR, the growth variable (GRO) remains insignificant. This surprising result may be due to delayed effects of higher investments on economic growth. However, it is also possible that private creditors honoured higher investments without paying attention to the efficiency of investments.

most pronounced for this group. The investment ratio also figures prominently in inducing further capital inflows to credit constrained borrowers which did not benefit from concerted bank lending. With the exception of GOVR in the DIS-equation, all other variables remain insignificant for this regime, however. This may indicate that is is more difficult for smaller problem debtors to attract new credits.

All in all, the empirical evidence presented in Table 2 suggests that it pays for borrowers to implement economic adjustment programs. Better policies and favourable performance make private lenders less reluctant to provide additional funds. However, the regression analysis also indicates that other than economic policy and performance variables affect the lending behaviour of private creditors. Especially in the case of net transfers, the overall explanatory power of the equations remains limited, as reflected in low adjusted $\bar{R}^2$. The fact that the constant term is frequently significant points to the relevance of other factors as well.

The overall statistical fit of the regressions is not improved when external shock variables are considered additionally. Table 3 shows that the impact of economic policy and performance variables is not affected by this modification. With only one exception, changes in terms of trade (TOT) and interest rates (IRAT) remain insignificant in all equations. Private creditors are not prepared to compensate unfavourable world market influences by additional lending[1]. An inverse relationship between the finan-

[1] Especially in the case of IRAT, for which t-values are relatively high, the evidence rather suggests that net transfers are reduced when external shocks occur. That fits into the experience of the late 1970s and early 1980s when lenders attempted to shift external shock risks to the debtors. This applies to the risk of rising international interest rates particularly. Elsewhere it is argued that this shift of risks from creditors to borrowers is not in line with a macro-economically efficient distribution of risks [Nunnenkamp, 1988a]. The creditors which are relatively well equipped with capital can presumably absorb external shocks with lower costs than developing countries.

Table 3 - The Impact of External Shocks on Net Transfers out of Credits from Private Sources[a], 1983-1986

Lending regime[b]	Dependent variable	Constant term	Explaining variables: TOT	IRAT	GRO	INVR	WMSHD	REXR	GOVR	DEFR	$\bar{R}^2$ F	Degree of freedom
All 36 countries	NTR	0.44	-0.011	-0.252	-0.020		0.072**	0.003	0.011		0.04	76
		(0.19)	(-0.20)	(-1.20)	(-0.20)		(2.76)	(0.12)	(0.48)		1.65	
	NTR	-4.19*	0.022	-0.203		0.205**	0.059**	-0.025		-0.030	0.22	76
		(-1.79)	(0.45)	(-1.09)		(4.12)	(2.56)	(-0.95)		(-0.64)	4.80	
14 credit constrained countries benefiting from involuntary lending	NTR	4.42	0.013	-0.549	-0.233		0.163**	-0.006	-0.046		0.20	26
		(0.93)	(0.13)	(-1.20)	(-1.50)		(3.16)	(-0.13)	(-0.63)		2.31	
	NTR	1.42	0.022	-0.623		0.173*	0.112**	-0.006		-0.101	0.22	26
		(0.29)	(0.24)	(-1.43)		(1.93)	(2.13)	(-0.14)		(-0.57)	2.50	
12 credit constrained countries not benefiting from involuntary lending	NTR	-2.32	0.032	-0.184	-0.043		-0.030	-0.013	0.035		-0.24	15
		(-0.53)	(0.25)	(-0.50)	(-0.16)		(-0.68)	(-0.22)	(0.95)		0.32	
	NTR	-7.95*	0.099	-0.784**		0.651**	-0.038	-0.049		-0.051	0.30	15
		(-1.94)	(1.03)	(-2.16)		(3.59)	(-1.20)	(-1.18)		(-0.77)	2.48	
7 non-constrained countries	NTR	-11.44	-0.068	0.714	0.448		0.034	0.011	0.116		0.04	11
		(-1.45)	(-0.59)	(0.85)	(1.17)		(0.41)	(0.10)	(1.26)		1.13	
	NTR	-9.12	-0.014	0.994		-0.035	0.015	0.004		-0.104	-0.14	10
		(-1.04)	(-0.13)	(1.00)		(-0.18)	(0.14)	(0.03)		(-0.47)	0.67	

[a]For the definition of variables and data sources, see the Appendix. All explaining variables calculated as averages of periods t and t-1. t-values in parentheses; ** indicates significance at the 5 per cent level (two-tailed t-test); * 10 per cent level. - [b]For the definition of lending regimes and the classification of the 36 sample countries, see Chapter III in the text.

Source: Own calculations.

cial needs caused by external shocks and the supply of funds prevails for credit constrained countries not benefiting from involuntary lending[1].

The statistical fit of our estimations improves considerably when private lending to Third World countries is viewed from the sovereign risk and bargaining perspective (Tables 4, A1 and A2). Again it is mainly with regard to credit disbursements that the distinction of different lending regimes is important (Table A1). The coefficients of EDTG are insignificant for both subgroups of credit constrained borrowers, which conflicts with the Eaton/Gersovitz line of reasoning that lending is negatively related with an increase in sovereign risk[2]. Moreover, Table A1 provides some indication that a higher debt-service burden induces higher loan disbursements, which points to the relevance of the incentive of lenders to protect existing claims. The latter result is due to the way in which reschedulings are typically organized. Especially US-banks insist on the transfer of interest payments in order to avoid that loans have to be classified as non-performing. Additional credits are granted to enable over-indebted borrowers to effect interest payments. Not surprisingly, the need to refinance interest obligations is positively related to the debt-service burden of problem borrowers.

However, the incentive of banks to ensure that interest payments are effected by debtors does not result in higher net transfers.

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[1] Private creditors seem more inclined to satisfy the shock-induced loan demand of non-constrained borrowers. The fact that the negative coefficients of TOT and the positive coefficients of IRAT remain insignificant may be attributed to demand rather than supply factors. The non-constrained debtors adjusted fairly quickly to unfavourable world market developments so that the need for additional loans was reduced.

[2] Standard sovereign risk arguments are supported, however, by the significantly negative coefficients of EDTG for the average of all 36 countries and for non-constrained borrowers. But the latter result should be regarded with considerable caution since multi-collinearity problems may distort the coefficient estimates.

Table 4 - The Impact of Sovereign Risk and Relative Bargaining Power on Net Transfers out of Credits from Private Sources[a], 1983-1986

Lending regime[b]	Dependent variable	Constant term	Explaining variables: EDTG	DSERG	TRADE	SHDEX	STDG	SHXDC	BEXP	$\bar{R}^2$ / F	Degrees of freedom
All 36 countries	NTR	-1.79*	-0.052**		0.105**	0.029**	0.012	-1.338*		0.34	92
		(-1.84)	(-6.71)		(3.98)	(2.73)	(0.31)	(-1.89)		11.20	
	NTR	-0.40	-0.051**		0.050*	0.024**	0.005		-0.075**	0.40	87
		(-0.39)	(-6.92)		(1.91)	(2.24)	(0.16)		(-2.22)	13.32	
	NTR	-0.64		-0.467**	0.062**	0.001	0.062*	-0.071		0.31	92
		(-0.60)		(-6.13)	(2.64)	(0.09)	(1.70)	(-0.10)		9.58	
14 credit constrained countries benefiting from involuntary lending	NTR	-1.57	-0.093**		0.211**	0.033**	0.059	-2.104*		0.51	33
		(-0.95)	(-6.23)		(4.23)	(2.67)	(0.85)	(-1.87)		9.00	
	NTR	0.58	-0.062**		0.033	0.025**	0.020		-0.069	0.47	31
		(0.31)	(-3.55)		(0.40)	(2.05)	(0.28)		(-1.67)	7.51	
	NTR	-1.44		-0.666**	0.174**	0.009	0.124	-1.632		0.32	33
		(-0.73)		(-4.30)	(2.95)	(0.64)	(1.49)	(-1.23)		4.57	
12 credit constrained countries not benefiting from involuntary lending	NTR	-9.00**	-0.031*		0.088*	0.051	0.398*	0.861		0.32	28
		(-2.07)	(-1.84)		(2.04)	(1.63)	(1.70)	(0.20)		4.10	
	NTR	-3.37	-0.046**		0.072*	0.036	0.142		-0.215	0.39	25
		(-0.84)	(-3.78)		(1.73)	(0.74)	(0.76)		(-1.21)	4.83	
	NTR	-6.87*		-0.358**	0.081**	0.000	0.349*	3.809		0.44	28
		(-1.79)		(-3.20)	(2.54)	(0.01)	(1.81)	(1.48)		6.21	
7 non-constrained countries	NTR	-14.80**	-0.227**		0.476**	0.146**	0.589*	-6.956**		0.46	13
		(-2.89)	(-3.67)		(4.03)	(3.24)	(1.90)	(-2.61)		4.02	
	NTR	1.01	-0.131*		0.227	0.108	-0.135		0.149	0.18	13
		(0.09)	(-1.82)		(1.26)	(1.06)	(-0.72)		(0.33)	1.78	
	NTR	1.38		-0.829**	0.162**	-0.005	-0.021	-0.372		0.44	13
		(0.28)		(-3.56)	(2.77)	(-0.10)	(-0.07)	(-0.16)		3.83	

[a]For the definition of variables and data sources, see the Appendix. EDTG: external debt, relative to GNP, outstanding at the end of period t-1; all other explaining variables calculated as averages of periods t and t-1. t-values in parentheses; ** indicates significance at the 5 per cent level (two-tailed t-test); * 10 per cent level. - [b]For the definition of lending regimes and the classification of the 36 sample countries, see Chapter III in the text.

Source: Own calculations.

Most notably, all coefficients of EDTG and DSERG are negative and highly significant, irrespective of the lending regime considered (Table 4). This strongly conflicts with the reasoning that lenders allow for higher net transfers to protect existing claims when the likelihood of default increases. It is only for unexpected changes in economic growth of debtor countries that the evidence is ambiguous (Table A2). When growth expectations are assumed to be based on the average growth rate of the three years preceding t (GROD1) lower current growth rates go along with higher net transfers, particularly for the regime of involuntary lending. In other words, lenders allow for higher transfers when the debtor's potential benefits from default rise relative to the costs. However, this result is reversed when GROD2 is substituted for GROD1. For medium and higher-income developing countries, there is some evidence from Nunnenkamp and Picht [1988, Table 4] that the differences between current growth rates and longer-term growth trends, rather than short-term changes in growth, affect the probability of default. Hence, the conclusion can be maintained that higher benefits from default do not induce higher net transfers. The results rather support the standard argument advanced by Eaton/Gersovitz that net transfers are negatively related to the benefits which debtors may realize by defaulting on external debt (see also Chapter II, pp. 9ff.).

The results on the role of sanctions, which may be imposed by creditors in the case of default, largely confirm standard sovereign-risk arguments as well[1]. Private creditors are more inclined to provide additional net transfers when the borrower's potential costs of default are relatively high. This applies to all lending regimes, although some differences exist with regard to the size of coefficients and significance levels.

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[1] As far as the following variables are concerned, there are hardly any differences between Tables 4 and A2. Since the inclusion of GROD1 or GROD2 does not affect the coefficients of the other variables,the interpretation of results can be restricted to the basic NTR-equations of Table 4.

- The results are strongest in the case of TRADE. With only two exceptions, Table 4 reveals a significantly positive relationship between net transfers and the debtors' dependence on external trade. The creditors are confident that borrowers will refrain from repudiating foreign debt as long as their benefits from continued external trade relations are substantial.
- Similarly, lenders consider the loss of trade credits to be an important cost of default. Consequently, net transfers are higher when short-term trade financing (SHDEX) figures prominently. This is especially so for credit constrained countries benefiting from involuntary lending; whereas the coefficients of SHDEX remain insignificant for the group of constrained debtors without involuntary lending.
- The motivation of borrowers to maintain cooperative credit relations, because otherwise they would not be able to smooth fluctuations in domestic absorption (STDG), is less relevant in explaining net transfers. In the case of large over-indebted borrowers benefiting from involuntary lending, private creditors do not rely on the Eaton/Gersovitz reasoning that debtors avoid defaults in order to be eligible to borrow for income-smoothing purposes in the future again. However, private creditors consider fluctuations in domestic absorption as a safeguard against debt repudiation in the case of smaller constrained borrowers.

All in all, the counterthreat of sanctions represents an important determinant of the lending behaviour of private creditors. Net transfers significantly depend on the potential costs of default, which indicates that banks rely on the effectiveness of sanctions[1].

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[1] The dominant role of the threat of being cut off from external trade is also evident when disbursements are substituted for net transfers as the dependent variable (Table A2). The impact of short-term fluctuations in domestic absorption remains largely unaffected by this modification. The relevance of trade financing is considerably reduced.

The evidence on the remaining variables reflecting the bargaining power of debtor countries, i.e., SHXDC and BEXP, is not very telling. When net transfers are to be explained, the coefficients mostly remain insignificant (Table 4). The hypothesis that debtors take advantage of high bank exposure in pressing for higher transfers is rejected. The same applies to the hypothesis that banks are less reluctant to provide additional funds to borrowing countries which represent relatively important export markets for the creditor nations[1]. When disbursements are the dependent variable, it is only for constrained borrowers not benefiting from involuntary lending that disbursements are positively related to export market size (Table A1). The results achieved for the regime of involuntary lending do not differ considerably from those given in Table 4[2].

VI. Summary and Conclusions

It was the major aim of this paper to assess the empirical relevance of the various conjectures raised in the theoretical literature on the determinants of commercial lending to developing countries in the 1980s. This was done on the basis of the hypothesis that lending is no longer governed by a uniform set of incentives but rather taking place under different lending regimes. The empirical evidence presented confirms that a dif-

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[1] Surprisingly, the coefficients of SHXDC are significantly negative in some cases. This may be attributed to relatively high transfers at times when large current account deficits induced many borrowers to cut imports substantially. Possibly, the bargaining power of debtors does not depend on market size in the first place, but rather on the degree to which imports are suppressed. However, this finding may also result from the IMF-policies followed in the early phase of the international debt crisis. The IMF pressed the commercial banks to provide fresh money to problem borrowers; at the same time, IMF-conditionality imposed on debtors frequently involved import reductions.

[2] The significantly positive coefficient of BEXP in the DIS-equation for all 36 countries seems to be largely due to demand effects in the case of non-constrained debtors.

ferentiated approach is required. It is mainly with regard to credit disbursements that the distinction of different lending regimes matters. In the case of involuntary lending, there is some - though rather weak - support for the argument advanced by Krugman that unfavourable economic performance of debtors leads to higher credit disbursements. In conflict with the Eaton/Gersovitz line of reasoning, a negative relationship between the potential benefits of debtors from default and disbursements does not exist for credit constrained borrowers.

Even under conditions of involuntary lending, however, the incentive of banks to protect existing claims does not result in higher net transfers. The findings on the determinants of net transfers are most important since negative net transfers from which many developing countries suffered in the recent past constitute the central problem in international credit relations. The empirical evidence can be summarized as follows:

- In contrast to the 1970s and early 1980s, better economic policies and favourable economic performance of debtors were honoured by private creditors after the debt crisis erupted. Especially the investment ratio figured prominently in encouraging further capital inflows. Only for non-constrained debtors the effect of domestic policies remains indeterminate since capital inflows are demand determined. The counterhypothesis that policy-induced improvements in economic performance of problem borrowers result in reduced net transfers has to be rejected.
- Private creditors were not prepared to compensate unfavourable world market developments by additional lending. It proved to be most difficult for constrained borrowers not benefiting from involuntary lending to attract further capital inflows when they were hit by external shocks.
- Standard sovereign risk arguments dominate when net transfers are to be explained. Increasing default risks added to the reluctance of private creditors to provide additional trans-

fers. In deciding on whether or not to continue lending, banks relied on the effectiveness of trade sanctions particularly.

From these findings, several conclusions can be drawn as to how to overcome the reluctance of commercial banks to transfer further capital and to improve the growth prospects of today's problem borrowers. The reversal of international capital flows since 1982 was typically due to drastically reduced inflows of new bank credits, rather than higher debt-service obligations. The refusal of private creditors to provide additional net transfers can be partly attributed to the fact that far-reaching and consistent economic policy reforms have not yet been introduced by most problem borrowers. It is thus likely to pay for borrowers to intensify adjustment efforts. Policy reforms are indispensable to restore the international creditworthiness of credit constrained debtors.

Arguably, adjustment programs are a necessary, but not a sufficient condition for the resumption of commercial bank lending to developing countries on a voluntary basis [Nunnenkamp, 1988a]. This is because the commitment to reorient economic policies is often not credible. The creditors face considerable uncertainties whether or not borrowers will stick to the pre-announced policy course, and whether or not they will finally decide to default on their external debt. Presently, international transfer negotiations are characterized by informational asymmetries and the threat that borrowers refuse to service external debt although they are able to pay. It is thus most important to reduce sovereign risks in international lending, in order to encourage private creditors to resume lending to developing countries.

The creditors' willingness to share the credit risks triggered off by unfavourable world market developments is likely to increase, if the debtors' incentives are strengthened to meet debt obligations by pursuing efficient policies. Hence, we would make considerable headway towards a macro-economically efficient distribution of credit risks between debtors and creditors, and the capital outflow out of developing countries can be checked.

Appendix: Definition of Variables

As far as the dependent variable is concerned, i.e. capital flows to developing countries from private creditors, we refer to credit disbursements (DIS) and net transfers (NTR; i.e. DIS minus interest and amortization payments) as given in the World Bank's World Debt Tables. Both variables are expressed as a share of GNP and include long-term public and publicly guaranteed credits from private creditors as well as total non-guaranteed private credits. For non-guaranteed private debt, the differentiation between private and official creditors is not available for most of our sample countries. So we decided to include total non-guaranteed private debt. The distortions arising from this procedure remain minimal, as indicated by the marginal role of official creditors for this type of debt in the case of borrowing countries for which disaggregated data is available. Short-term debt is completely omitted since the calculation of net transfers is not possible and the role of private creditors cannot be identified.

The following explaining variables are considered in order to assess the impact of economic performance and economic policies of debtor countries on the lending behaviour of private creditors:

GRO : annual rate of growth in real GDP per capita as given in UNCTAD [1988];

INVR : gross fixed capital formation, as per cent of GDP [IMF, International Financial Statistics];

WMSHD : annual change in world export market shares of sample countries, calculated from export figures in current prices as given in IMF, International Financial Statistics (line 70d), deflated by export unit values presented in UNCTAD [1988];

REXR : annual change in real effective exchange rates, based on IMF-data on nominal exchange rates (partner countries' currencies per unit of domestic currencies of sample countries) and consumer prices; trade weights (shares in world trade) calculated from International Financial Statistics and Direction of Trade Statis-

tics[1];

GOVR : government expenditure, as per cent of GDP [IMF, International Financial Statistics];

DEFR : government budget deficit, as per cent of GDP [IMF, International Financial Statistics].

The exposure of sample countries to external shocks is captured by the following indicators:

TOT : annual change in the terms of trade, proxied by unit value indices given in UNCTAD [1988];

IRAT : average interest rates of new commitments by private creditors [World Bank, World Debt Tables].

The following variables enter the analysis on the impact of sovereign risk and relative bargaining power of borrowers and lenders on private lending to Third World countries:

EDTG : total external debt of sample countries (short-term debt included), as per cent of GNP [World Bank, World Debt Tables];

DSERG : total debt service on long-term debt of sample countries, as per cent of GNP [World Bank, World Debt Tables];

GROD1 : difference between real per-capita growth of sample countries in period t and the average growth rate of the three preceding periods [based on UNCTAD, 1988];

GROD2 : difference between real per-capita growth of sample countries in period t and the average growth rate in the 1970-80 period [based on UNCTAD, 1988];

STDG : fluctuation in real GDP per capita of sample countries, as reflected in the standard deviation for the 1970-81 period [based on IMF, International Financial Statistics];

TRADE : imports plus exports of sample countries, as per cent of GDP [calculated from national accounts in IMF, International Financial Statistics];

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[1] For the formula applied and its economic justification, see Fischer, Spinanger [1986, pp. 83ff.].

SHDEX : short-term debt of sample countries, as per cent of the borrowers' exports of goods and services [World Bank, World Debt Tables];

SHXDC : importance of sample countries as an export market for the developed countries; proxied by the imports of sample countries from the European Community, Japan, and the United States, as per cent of the latter countries' total exports [IMF, Direction of Trade Statistics];

BEXP : exposure of Western commercial banks in the sample countries; proxied by total amounts owed US banks by sample countries, as per cent of the total capital of reporting US banks [Federal Reserve System, Country Exposure Lending Survey].

Table A1 - The Impact of Sovereign Risk and Relative Bargaining Power on Disbursements of Credits from Private Sources[a], 1983-1986

Lending regime[b]	Dependent variable	Constant term	Explaining variables: EDTG	DSERG	TRADE	SHDEX	STDG	SHXDC	BEXP	$\bar{R}^2$ F	Degrees of freedom
All 36 countries	DIS	1.18	-0.023**		0.117**	0.008	0.017	0.948		0.14	92
		(1.01)	(-2.42)		(3.72)	(0.66)	(0.38)	(1.12)		4.25	
	DIS	0.83	-0.016**		0.102**	0.016	0.013		0.058*	0.13	87
		(0.82)	(-2.28)		(3.91)	(1.52)	(0.38)		(1.74)	3.82	
	DIS	-0.41		0.219**	0.026	0.001	0.074*	1.740**		0.15	92
		(-0.33)		(2.48)	(0.96)	(0.05)	(1.75)	(2.18)		4.32	
14 credit constrained countries benefiting from involuntary lending	DIS	-0.65	-0.035		0.295**	0.010	0.067	-0.642		0.34	33
		(-0.27)	(-1.59)		(3.97)	(0.56)	(0.65)	(-0.38)		4.89	
	DIS	3.97	0.003		0.027	-0.003	-0.071		0.012	-0.12	31
		(1.68)	(0.15)		(0.26)	(-0.21)	(-0.77)		(0.22)	0.25	
	DIS	-1.76		0.246	0.162**	0.009	0.043	-0.576		0.32	33
		(-0.70)		(1.24)	(2.16)	(0.46)	(0.41)	(-0.34)		4.58	
12 credit constrained countries not benefiting from involuntary lending	DIS	-5.71**	0.007		0.068**	0.000	0.336**	8.060**		0.47	28
		(-2.29)	(0.74)		(2.75)	(0.01)	(2.50)	(3.29)		6.97	
	DIS	-5.83**	-0.010		0.148**	0.083**	0.188*		-0.053	0.59	25
		(-2.76)	(-1.62)		(6.74)	(3.24)	(1.92)		(-0.57)	9.63	
	DIS	-8.06**		0.179**	0.056**	0.023	0.433**	8.270**		0.58	28
		(-3.74)		(2.84)	(3.15)	(1.33)	(3.99)	(5.72)		10.29	
7 non-constrained countries	DIS	1.69	-0.097*		0.226**	0.029	-0.029	0.887		0.33	13
		(0.38)	(-1.81)		(2.20)	(0.75)	(-0.11)	(0.38)		2.81	
	DIS	6.65	-0.089*		0.167	-0.020	-0.177		0.267	0.36	13
		(0.85)	(-1.79)		(1.33)	(-0.29)	(-0.59)		(0.85)	3.05	
	DIS	6.57		-0.119	0.071	-0.011	-0.257	3.310		0.19	13
		(1.39)		(-0.54)	(1.28)	(-0.23)	(-0.95)	(1.50)		1.82	

[a]For the definition of variables and data sources, see the Appendix. EDTG: external debt, relative to GNP, outstanding at the end of period t-1; all other explaining variables calculated as averages of periods t and t-1. t-values in parentheses; ** indicates significance at the 5 per cent level (two-tailed t-test); * 10 per cent level. - [b]For the definition of lending regimes and the classification of the 36 sample countries, see Chapter III in the text.

Source: Own calculations.

Table A2 - The Impact of Sovereign Risk and Relative Bargaining Power on Net Transfers out of Credits from Private Sources[a], 1983-1986

Lending regime[b]	Dependent variable	Constant term	Explaining variables: EDTG	DSERG	GROD1	GROD2	TRADE	SHDEX	STDG	SHXDC	$\bar{R}^2$ F	Degrees of freedom
All 36 countries	NTR	-1.93**	-0.049**		-0.101*		0.097*	0.027**	0.019	-1.241*	0.36	91
		(-2.00)	(-6.06)		(-1.71)		(3.63)	(2.51)	(0.30)	(-1.76)	10.02	
	NTR	-1.08	-0.055**			0.115*	0.098**	0.033**	0.017	-1.640**	0.36	91
		(-1.02)	(-6.97)			(1.69)	(3.72)	(3.07)	(0.45)	(-2.27)	10.00	
	NTR	-0.80		-0.455*	-1.80**		0.060**	-0.000	0.064*	-0.086	0.37	91
		(-0.79)		(-6.26)	(-3.20)		(2.70)	(-0.02)	(1.84)	(-0.13)	10.49	
	NTR	0.44		-0.508**		0.151**	0.053**	0.005	0.070*	-0.405	0.33	91
		(0.38)		(-6.58)		(2.14)	(2.27)	(0.45)	(1.95)	(-0.58)	9.06	
14 credit constrained countries benefiting from involuntary lending	NTR	-1.01	-0.086**		-0.078		0.175**	0.028**	0.058	-2.515	0.51	32
		(-0.57)	(-4.87)		(-0.87)		(2.70)	(2.06)	(0.83)	(-2.05)	7.57	
	NTR	-0.74	-1.000**			0.115	0.204**	0.037**	0.062	-1.918*	0.52	32
		(-0.42)	(-6.30)			(1.19)	(4.08)	(2.89)	(0.90)	(-1.70)	7.83	
	NTR	0.87		-0.629**	-0.276**		0.097*	-0.004	0.016	-3.184**	0.49	32
		(0.48)		(-4.69)	(-3.51)		(1.75)	(-0.27)	(1.61)	(-2.59)	7.17	
	NTR	-1.45		-0.666**		-0.001	0.174**	0.009	0.124	-1.634	0.30	32
		(-0.68)		(-4.14)		(-0.01)	(2.85)	(0.62)	(1.46)	(-1.19)	3.69	
12 credit constrained countries not benefiting from involuntary lending	NTR	-9.10*	-0.028		-0.068		0.083*	0.049	0.394	1.228	0.30	27
		(-2.06)*	(-1.60)		(-0.59)		(1.86)	(1.53)	(1.66)	(0.28)	3.39	
	NTR	-8.31*	-0.035*			0.086	0.087*	0.059*	0.399	0.035	0.30	27
		(-1.83)	(-1.92)			(0.62)	(2.01)	(1.73)	(1.69)	(0.01)	3.40	
	NTR	-6.73*		-0.346**	-0.075		0.079**	0.000	0.329	3.696	0.43	27
		(-1.74)		(-3.04)	(-0.74)		(2.47)	(0.00)	(1.68)	(1.43)	5.19	
	NTR	-6.36		-0.380**		0.090	0.076**	0.005	0.368*	3.596	0.43	27
		(-1.63)		(-3.26)		(0.075)	(2.33)	(0.16)	(1.88)	(1.38)	5.19	
7 non-constrained countries	NTR	-15.99**	-0.230**		-0.237		0.505**	0.162**	0.583*	-6.758**	0.50	12
		(-3.18)	(-3.84)		(-1.36)		(4.34)	(3.58)	(1.94)	(-2.62)	3.98	
	NTR	-14.83**	-0.227**			-0.411	0.500**	0.175**	0.400	-5.190	0.48	12
		(-2.96)	(-3.75)			(-1.25)	(4.26)	(3.51)	(1.18)	(-1.75)	3.76	
	NTR	1.15		-0.818**	-0.029		0.164**	-0.002	-0.021	-0.357	0.39	12
		(0.21)		(-3.24)	(-0.15)		(2.63)	(-0.04)	(-0.07)	(-0.15)	2.95	
	NTR	1.25		-0.816**		-0.339	0.181**	0.020	-0.175	1.069	0.44	12
		(0.25)		(-3.50)		(-0.99)	(2.93)	(0.36)	(-0.54)	(0.39)	3.35	

[a]For the definition of variables and data sources, see the Appendix. EDTG: external debt, relative to GNP, outstanding at the end of period t-1; all other explaining variables calculated as averages of periods t and t-1. t-values in parentheses; ** indicates significance at the 5 per cent level (two-tailed t-test); * 10 per cent level. - [b]For the definition of lending regimes and the classification of the 36 sample countries, see Chapter III in the text.

Source: Own calculations.

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